First Named Applicant: Agrawal	)	Art Unit: 2161
	)	
Serial No.: 10/791,941	)	Examiner: Nguyen
	)	
Filed: March 3, 2004	)	**ARC920010030US2**
	)	
For: **SYSTEM AND METHOD FOR GENERATING**	)	April 12, 2007
HORIZONTAL VIEW FOR SQL QUERIES TO	)	750 B STREET, Suite 3120
VERTICAL DATABASE	)	San Diego, CA 92101
	)	

RESPONSE TO OFFICE ACTION

Commissioner of Patents and Trademarks
Washington, DC 20231

Dear Sir:

This responds to the Office Action dated March 28, 2004. All pending independent claims (12 and 24) along with dependent Claims 13-15 and 25-27 have been rejected under 35 U.S.C. §102 as being anticipated by French et al., USPN 5,794,229, and dependent Claims 16-23 and 28-35 have been rejected under 35 U.S.C. §103 as being unpatentable over French et al. in view of Graefe et al., USPN 6,298,342. The obviousness-type double patenting rejections are noted, and will be overcome with a Terminal Disclaimer at such time as double patenting remains the sole impediment to allowance.

The rejections completely misunderstand the teachings of French et al. Quite contrary to the allegation in the Office Action, French et al. *does not teach or suggest* "transforming a horizontal-based SQL query into a transformed query having a format for execution against at least one vertical table" as recited in independent Claim 12, or "defining an enablement layer including a horizontal view representative of the vertical table,

CASE NO.: ARC920010030US2
Serial No.: 10/791,941
April 12, 2007
Page 2

PATENT
Filed: March 3, 2004

and using the enablement layer to extract data from the database based on an SQL query without requiring a user to tailor the query to a vertical format" as set forth in independent Claim 24. Instead, the section of French et al., (col. 6, lines 58-60) relied on as a teaching of horizontal tables is completely uncoupled from the subsequent discussion of vertical tables. French et al. speaks only of horizontal tables as being a structure separate and apart and never related to the ensuing vertical tables.

Take, for instance, col. 8, starting on line 13, wherein French et al. makes clear that the horizontal tables in French's preceding discussion requires improvement, because, per French et al., the horizontal system is inefficient in processing DSS queries (line 47 indeed explicates about "the poor performance of OLTP systems in providing DSS stems"). French et al. goes on in this vein for several more columns until, at col. 11, he introduces his "modifications in accordance with the present invention", the second one of which (in column 12) is the vertical partitioning of data.

French et al. continues to describe its vertical structure in columns 13-15 without once mentioning anything about querying, much less what is recited in the present claims. Indeed, at col. 15, lines 2-9, French et al. explicitly states that the entire logical organization must be changed *"to emphasize the notion of columns, instead of tables"*, clearly indicating that French et al. fails to suggest the present claims. Indeed, the bulk of the rest of the French et al. disclosure from column 20 on is directed to constructing declaration classes, indicating that French et al. falls into precisely the trap envisioned in the present specification starting at the last line of page 2 through page 3, line 5 of requiring the construction of complex vertical table-oriented querying.

French et al. is even more explicit in this regard in its claim 20, which requires "receiving a user query about data values stored in a particular column". There is thus no recognition in French et al. of transforming

CASE NO.: ARC920010030US2
Serial No.: 10/791,941
April 12, 2007
Page 3

PATENT
Filed: March 3, 2004

a query formatted for execution against a horizontal table to one suitable for execution against a vertical table, as set forth in Claim 12. Likewise, French et al. does not suggest using an enablement layer that includes a horizontal view representative of a vertical table to extract data from a database based on an SQL query without requiring a user to tailor the query to a vertical format, as set forth in Claim 24. French et al. evidently violates the recognition in the present background that "even in the hands of an expert, tailoring an SQL query for a vertical table is cumbersome and error-prone", since that is precisely what French et al. appears to do.

The teaching of French et al. in col. 7, line 36 - col. 8, line 12 is simply a discussion of conventional query optimizing for horizontal tables. It has nothing to do with the vertical table improvement of French et al. which is not introduced for several more columns. Plainly, French et al. assumes that the reader understands that French et al. provides background into conventional horizontal table system querying, as an introduction to French et al.'s subsequent divulgation of its vertical table scheme. There is nothing in French et al. to give the reader the idea to transform the query for execution against a vertical table, since French et al. makes clear that the vertical table part of the disclosure has not yet occurred. The claims are patentable.

Moreover, on page 4 of the Office Action the examiner alleges that the table 300 of French et al. shows that French et al. "defines a logical horizontal view over the vertical table". This is wrong. As French et al. makes clear in col. 13, the table 300 is nothing more than a horizontal representation, for disclosure purposes, of the vertical tables, not that an enablement layer having a horizontal view is used during querying as recited in, e.g., Claim 24.

Regarding the Section 103 rejections, the examiner alleges on page 5 of the Office Action that it is "inherent" that vertical tables "must" be able to convert to horizontal for query access. On the contrary, not

105-123.AMD

CASE NO.: ARC920010030US2
Serial No.: 10/791,941
April 12, 2007
Page 4

PATENT
Filed: March 3, 2004

only is not inherent, the allegation is directly contradicted by the complex scheme of French et al. summarized above in constructing vertical table-oriented declaration classes.

To the extent that the examiner pursues the "inherency" theory, it is noted that the doctrine of inherency applies only to anticipation rejections, not to obviousness rejections, MPEP §2112. Moreover, to be inherent, a quality must necessarily be present in the reference, id. As the above analysis makes clear, it is not only unnecessary for French et al. to possess the allegedly inherent quality, it is plain that French et al. in fact does not possess it.

With respect to certain dependent claims, the following arguments are germane. The allegation that French et al., col. 7, lines 41-47 teaches the operators of, e.g., Claim 14 is incorrect. As stated above, this portion of French et al. has nothing to do with vertical tables, much less the operators set forth in the present dependent claims.

With respect to Graefe et al., the examiner appears to be confusing the post-querying table pivot of Graefe et al. with a query transformation when it is alleged that it would have been obvious to incorporate Graefe et al.'s pivot operators into French et al. In accordance with the teachings of Graefe et al., the pivot operators of Graefe et al. do not do what the examiner wishes them to do in French et al. Instead, if incorporated into French et al. in accordance with what the prior art discloses, and not with what the examiner discerns in hindsight, Graefe et al. would simply pivot whatever output French et al. might produce. It would not supply an "operator" for query transformation pre-output. Again, the allegation that "the claimed provision is inherent" is simply wrong, since the "claimed provision" is not *necessarily* incorporated into French et al., MPEP §2112.

CASE NO.: ARC920010030US2
Serial No.: 10/791,941
April 12, 2007
Page 5

PATENT
Filed: March 3, 2004

With this in mind, there is no prior art reason to combine Graefe et al., which simply pivots a table post-querying for presentation purposes, with French et al. which is directed to using vertical tables for actual data storage pre-querying.

In addition, Applicant makes the following observations. The Examiner makes a finding that the v2h operator of Claim 16 is the same as the pivot operation in Figure 4 of Graefe et al., without any evidentiary support. This is important, since claims are to be interpreted as one skilled in the art would interpret them, MPEP §2111.01, and there is no evidence of record that one skilled in the art would regard Figure 4 of Graefe et al. as a v2h operator that is used to transform queries as claimed, In re Dembiczak, 175 F.3D 994, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999) (the range of sources available does not diminish the requirement for **actual evidence**, and "broad conclusory statements…,standing alone, are not evidence").

Claim 17 requires that the vertical table include object identifications with corresponding attribute names and attribute values, and that the operator executes a left outer join of a projection of distinct object identifiers of the vertical table with a sequence of left outer joins of a set of projections of attribute values from the vertical table. This has been rejected on the basis of Graefe et al., Figure 4 and col. 7, lines 34-50, which indeed discusses things like outer joins *but not in the context of being used by an operator that transforms a query*. Thus, the rejection of Claim 17 is deficient.
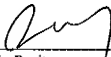
Claim 20, which specifies that the act of *transforming the query* using a table join has been rejected on the basis of Graefe et al., col. 7, lines 34-50, despite the fact that this portion of Graefe et al., like the rest of the reference, utterly fails to mention table joins in the context of transforming a query against a horizontal view for execution against an underlying vertical table. Rather, the relied-upon section of Graefe et al. is

CASE NO.: ARC920010030US2
Serial No.: 10/791,941
April 12, 2007
Page 6

PATENT
Filed: March 3, 2004

directed to extending relational calculus query expressions with relational algebraic expressions, something totally different than what is claimed.

Similarly, nothing in Graefe et al.'s teaching at col. 7, lines 47-51 teach or suggest using the mentioned "aggregations" for transforming a query against a horizontal view for execution against an underlying vertical table as recited in Claim 21.

The Examiner is cordially invited to telephone the undersigned at (619) 338-8075 for any reason which would advance the instant application to allowance.

Respectfully submitted,

John L. Rogitz
Registration No. 33,549
Attorney of Record
750 B Street, Suite 3120
San Diego, CA 92101
Telephone: (619) 338-8075

JLR:jg